REMARKS

The present amendment is prepared in accordance with the requirements of 37 C.F.R. § 1.121. A complete listing of all the claims in the application is shown above showing the status of each claim. Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the remarks below.

No claims have been amended since applicants believe that the originally filed claims are properly allowable over the cited prior art of record.

Rejection under 35 USC § 102

The Examiner has rejected claims 1-5, 7, & 9-20 under 35 U.S.C. 102(b) as being anticipated by Briscoe et al (U.S. Patent No. 6,527,890).

As recited, independent claim 1 is directed to a ceramic micro well plate that includes a first ceramic greensheet having at least one vertical opening that is a reaction chamber of the micro well plate, and a second ceramic greensheet having at least one vertical opening that is aligned with the vertical opening in the first ceramic greensheet. This second vertical opening in the second ceramic greensheet has an optical micro plug therein for viewing the vertical opening in the first greensheet, which again, is a reaction chamber.

Independent claim 13 is also directed to a ceramic micro well plate that includes first, second and third ceramic greensheets. The first ceramic greensheet has a plurality of vertical openings, which are reaction chambers of the micro well plate. The second ceramic greensheet has a plurality of horizontal openings with selected ones connecting

selected ones of the vertical openings in the first greensheet. The third greensheet has a plurality of vertical openings aligned with the vertical openings in the first greensheet, whereby optical micro plugs in these vertical openings in the third greensheet allow viewing of the vertical openings in the first greensheet, which again are the reaction chambers of the claimed micro well plate.

Independent claim 16 is directed to method of forming a ceramic micro well plate by forming a plurality of vertical openings in a first ceramic greensheet, whereby these vertical openings are reaction chambers of the micro well plate. A plurality of vertical openings are also formed in a second ceramic greensheet, and aligned with the vertical openings in the first greensheet. An optically effective material is then deposited into the vertical openings in the second greensheet to form a plurality of optical micro plugs. These optical micro plugs allow viewing of the vertical openings in the first greensheet, which again are the reaction chambers of the presently claimed micro well plate. Optionally, horizontal openings in a third greensheet may be provided between the first and second greensheets to connect selected vertical openings in the first greensheet to one another, while the optical micro plugs in the second greensheet remain in alignment with the vertical openings in the first greensheet to allow viewing of the reaction chambers (claim 17.)

An essential feature of the invention is that the optical micro plugs of the present micro well plate reside in vertical openings within a greensheet thereof, and as such, are vertical optical micro plugs. These vertical optical micro plugs are in alignment with vertical openings in another greensheet that represent the reaction chambers of the present

micro well plate, such that, each optical micro plug is part of its corresponding micro well. These optical micro plugs may be lenses (claim 5, 15, 20), sensors (claim 7, 15, 20), conductive (claim 9, 15, 20), non-conductive (claim 10, 15, 20), a heater (claim 11, 15, 20), or even a cooler (claim 12, 15, 20).

Applicant submits that the present invention is not anticipated by Briscoe et al. Anticipation is but the ultimate or epitome of obviousness. To constitute anticipation, all material elements of a claim must be found in one prior art source. In re Marshall, 577 F.2d 301, 198 USPQ 344 (CCPA 1978).

Briscoe et al. is limited to a micro-gas chromatograph device for analyzing an analyte gas having a channel formed in a plurality of sintered green-sheet layers, with a thick-film paste added to the channel to provide a porous plug sintered in the micro-gas chromatograph column. (Abstract, col. 2, ll. 43-58 and col. 3, ll. 10-23.) Briscoe discloses that a plurality of greensheets are provided, whereby these green-sheet layers are textured to form vias, channels, or cavities in the finished multilayered structure. (Col. 2, ll. 48-56; col. 4, ll. 7-39.) Once textured, a thick-film paste is applied to each textured green-sheet layer (col. 4, l. 40 to col. 5, l. 32), followed by stacking the layers (col. 5, l. 33 to col. 6, l. 23), laminated (col. 6, ll. 23–65) and sintered (col. 6, l. 66 to col. 8, l. 9).

Referring to Figs. 2 and 3 of Briscoe et al., the resultant column 60 in the finished multilayered structure is defined by a plurality of planar column sections connected in series by vias to result in an interlocking spiral pattern 110. (Col. 8, ll. 13-23 and col. 9, ll. 3-25.) This spiral pattern "column 60 is filled with a porous ceramic plug 120 along most of its length." (Col. 9, ll. 37-38.)

It is submitted that Briscoe et al. does not disclose, or even contemplate, a micro well plate having vertical openings in a greensheet layer, with vertical optical micro plugs in such opening, whereby these optical micro plugs are in vertical alignment with vertical opening reaction chambers of the plate, as is claimed. Again, applicants' claimed micro well plate has vertical optical micro plugs that are each part of their corresponding micro wells, thereby allowing viewing of these vertical opening reaction chambers. On the contrary, Briscoe et al. is limited to horizontal columns connected in series by vertical vias to provide a spiral pattern column. (Col. 8, ll. 13-23; col. 9, ll. 3-38; and Figs. 2 and 3.) The spiral pattern column is filled with a plug; however, this plug is not part of a vertical micro well since it fills both horizontal and vertical channels. (Col. 9, ll. 37-38 and Fig. 2.) Briscoe et al. does not disclose or suggest viewing vertical opening reaction chambers from vertical optical micro plugs. Briscoe et al. also does not disclose or suggest that vertical optical micro plugs that are part of their corresponding micro wells may be lenses, sensors, conductive, non-conductive, heaters or coolers, such that, these features are also integrated into the micro wells of the plate.

In view of the forgoing, applicants submit that the claims of the instant invention include limitations not disclosed nor contemplated by Briscoe et al. such that Briscoe et al. does not anticipate nor render obvious the instant invention.

Rejection under 35 USC § 103

The Examiner has also rejected claims 6 and 8 under 35 U.S.C. 103(a) as being unpatentable over Briscoe et al.

With respect to claim 6, the Examiner states that while Briscoe et al. does not teach that the optical micro plug comprises a magnet, Briscoe et al. does teach the use of nickel metal which is a transition metal, and as such, it would be obvious to substitute one transition metal for another (e.g., iron). As for claim 8, the Examiner recognizes that Briscoe et al does not teach that the optical micro plug includes marker molecules residing therein having high affinity to their target for identification and quantification of said target; however, states that Briscoe et al. does teach the use of an ionization detector, which would be obvious to substitute for a chemical ionization apparatus.

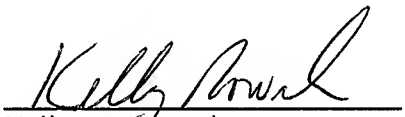
Applicants disagree with the Examiner's rejections and reasoning for such rejections. Notwithstanding so, it is submitted that the Examiner's substitutions, even if correct, would not remedy the deficiencies of Briscoe et al. As discussed above, Briscoe et al. does not anticipate nor render obvious the instant invention due to limitations in the invention which are not disclosed nor contemplated in Briscoe et al. since Briscoe et al. does not teach or suggest vertical optical micro plugs that are part of vertical micro wells for viewing the vertical reaction chambers thereof. Again, Briscoe et al. is limited to a spiral-like gas chromatography column that has vertical vias connected to horizontal channels.

Applicants further submit that the micro well plate of the present invention has a technical advantage not present in the prior art micro wells. It is known in the art that when fluid is introduced into a micro well, a meniscus forms on the top end of the fluid column. This meniscus is undesirable since it causes light to be scattered or rebounded, which undesirably distorts the light or provides incorrect results. The present invention

overcomes this problem associated with the meniscus at the fluid top by providing the present vertical optical micro plug at the bottom of a fluid column where there is no meniscus interference.

It is respectfully submitted that the application has now been brought into a condition where allowance of the case is proper. Reconsideration and issuance of a Notice of Allowance are respectfully solicited. Should the Examiner not find the claims to be allowable, Applicants' attorney respectfully requests that the Examiner call the undersigned to clarify any issue and/or to place the case in condition for allowance.

Respectfully submitted,



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